


Environmental Management Systems Pilot Program

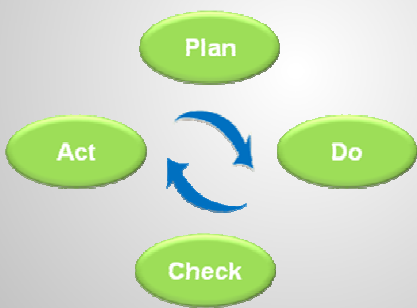
## The Basics of Environmental Management Systems



Kick-off Workshop  
November 17-18, 2009



## The Basics of EMS

- Systematic Process for Managing Environmental Risks and Continually Improving Environmental Performance



## What is an EMS?

### ◉ EMS is

- A Business System Applied to the Environmental Impacts of the Organization
- Includes Policies, Management Processes, Training, and Procedures
- Not Exclusively Focused on Compliance Requirements
- Strives for Reviewing, Analyzing, Controlling and Reducing Impacts
- Requires Ongoing Implementation and Continuous Improvement



## EMS Benefits for your Organization

- ◉ Improved Environmental Compliance
- ◉ Reduced Environmental Impacts
- ◉ Clarity of Responsibilities and Expectations
- ◉ Fewer "Fire Drills"
- ◉ Cost Avoidance and Increased Efficiency
- ◉ Increased Understanding and Awareness of Environmental Requirements and Impacts by Staff
- ◉ Positive Recognition

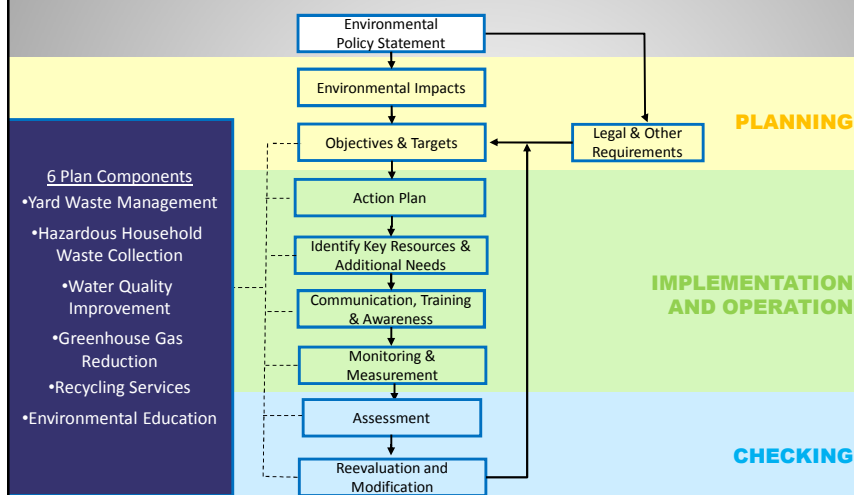



## 10 Elements of an EMS (HF 2570)

- Policy
- Impacts
- Legal and Other
- Objectives and Targets
- Action Plan
- Key Resources and Additional Needs
- Communication/Training/Awareness
- Monitoring and Measurement
- Assessment
- Reevaluation and modification




## Iowa EMS Framework (HF 2570)






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# Pre-EMS





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## Pre-EMS

- Obtain Management Support
- Appoint Specific Individuals to Lead the Development, Implementation, and Maintenance of the EMS
  - The Environmental Management Representative (EMR) is Responsible for the Day-to-Day EMS Implementation
  - The EMS Core Team Assists the EMR with Making Sure the EMS is Designed to Fit the Organization



## Gap Analysis



- ◉ In Order to Increase Effectiveness and Efficiency of Development of the EMS, Evaluate Each EMS Element For:

- The EMS Element is in Place and Functioning Well
- The EMS Element is in Place and Not Functioning as Designed
- The EMS Element is Partially in Place
- The EMS Element is Not in Place



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## Plan



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## 10 Elements of the EMS



### ◉ Environmental Policy Statement -

- Management's Environmental Commitment

- ❖ Prevention of pollution at its source through implementation of best management practices and resource conservation measures to reuse, reclaim, and recycle materials we generate.
- ❖ Utilization of Environmental Management Systems, as appropriate for our operations, to provide a framework for systematically reviewing and reducing our environmental footprint.
- ❖ Employees will abide by all environmental regulations and demonstrate environmental compliance in their daily work practices.
- ❖ Educate City employees on Dallas' environmental policies and motivate and encourage employees to practice environmental stewardship by raising awareness and sensitivity to environmental issues through City policies, regulations, training, and interactive dialogue.

## 10 Elements of the EMS (Continued)



### ◉ Environmental Impacts –

- Impacts, Potential or Actual, Associated with Activities, Services, and Facilities
  - Degradation of Water Quality
  - Reduction in Landfill Space
  - Improvement in Air Quality
- Identify Significant Impacts
  - With Limited Staff and Budgets, Identifying Significant Impacts Allows an Organization to Set Environmental Priorities
  - Identify and Document Process to Determine Significant Impacts
    - Most Common in EMS is to Rank Each Impact Against a Standardized Criteria , Then Sort Highest to Lowest Score



## Significant Impacts Example

Activity	Impact	Regulated	Community	Frequency	Score
Operate Diesel Equipment	Degradation of Air Quality	1	1	5	5
Stormwater Runoff from Composting Facility	Degradation of Surface Water Quality	3	1	5	15
Hazardous Waste Spills	Degradation of Soil	5	5	1	25
Recycling of E-waste	Pollution Prevention	1	1	3	3

### Notes:

- Scores on 1,3,5 scale
- Create written criteria definitions for consistent scoring
- Sort scores from highest to lowest



## 10 Elements of the EMS (Continued)

### Legal and Other Requirements

- Identify and Document Environmental Laws, Regulations, Permits, and Worker Health and Safety Regulations
  - Permits
  - Legislation
  - Regulations
  - Voluntary programs
  - Internal City or Departmental Procedures
- Establish a Process for Tracking Changes to Regulatory and Other Requirements



## 10 Elements of the EMS (Continued)



### Legal and Other Requirements-- Examples

- HF 2570
- Stormwater Pollution Prevention Plan (SWPPP)
- Spill Prevention, Control & Countermeasure (SPCC)
- Yard Waste Burn Bans
- Occupational Safety and Health Administration (OSHA)
- Resource Conservation and Recovery Act (RCRA)
- Conditionally Exempt Small Quantity Generator (CESQG)
- Mandate from Executive Management (Internal Policy)
- Others???



## 10 Elements of the EMS (Continued)



### The Remaining Seven EMS Elements Applied to Each of the Six Plan Components:

- Yard Waste Management
- Hazardous Household Waste Collection
- Water Quality Improvement
- Greenhouse Gas Reduction
- Recycling Services
- Environmental Education



## 10 Elements of the EMS (Continued)



### ● Objectives and Targets

- Establish Specific and Measureable Environmental Goals for the Organization for Each of the Six Plan Components
- Targets Must be Quantifiable

*Reduce Greenhouse Gases by 5% by December, 31, 2012*

*Implement an E-Waste Program by March, 15, 2011*

*Comply with Spill Prevention Control and Countermeasures Requirements by February 20, 2010*



## 10 Elements of the EMS (Continued)



### ● Action Plans

- Road Map for Achieving the Objectives and Targets
- Listing of Specific Task or Activities with Assigned Responsibilities and Associated Due Dates
- Implement a Process for Reporting and Tracking
- Update Objectives and Targets and Associated Action Plans as Needed



## Reduce Greenhouse Gases by 5% by December 31, 2012

Activity	Responsibility	Due Date
Collect Baseline GHG Emissions Information	Joe	10/1/2009
Publish Data on Website	Frank	11/1/2009
Convert Sedans to Electric	Norman	1/30/2010
Implement Biodiesel Program for On road fleet	Mary	3/15/2010
Investigate Methane Capture and Associated Costs	Lynne	9/30/2010
Implement Recycling Program	John	12/31/2011



## 10 Elements of the EMS (Continued)

- Identify Key Resources and Additional Needs
  - For Action Plans Associated with Objectives and Targets, Identify Resources
    - Costs
    - Staff
    - Equipment
  - Update Action Plans and Objectives and Targets as Additional Information Becomes Available
    - Grants Not Available
    - Changing Budgets
    - Technology Costs Higher than Expected
    - Staff Availability Changes



## Reduce Greenhouse Gases by 5% by December 31, 2012



Activity	Responsibility	Due Date	Status
Collect Baseline GHG Emissions Information	Joe	10/1/2009	Complete
Publish Initiative on Website	Frank	11/1/2009	Behind; Webmaster on Vacation until 11/15/09
Convert Sedans to Electric	Norman	1/30/2010	Not Feasible Due to Costs and Technology
Implement Biodiesel Program for On road fleet	Mary	3/15/2010	On Track; Received Bids from Vendors
Investigate Methane Capture and Associated Costs	Lynne	9/30/2010	In Progress



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## 10 Elements of the EMS (Continued)



### Communication/Training/Awareness:

- Establish and Document Procedures for Conducting *Internal* and *External Communication* of EMS-related Information
  - Decide What is Going to be Communicated and Methods of Communication
  - Must Include Plan for Reaching Out to Stakeholders
- Receiving and Responding to Requests for Relevant Information
  - How are Requests Received
  - Document
  - Evaluated
  - Responded to in a Timely Fashion



## 10 Elements of the EMS (Continued)



### Communication/Training/Awareness:

- Training Includes Making Employees Aware of the EMS and Their Role, and Appropriate Execution
  - Identify Training by Job Title or Description
  - Determine Frequency
  - Method of Tracking Training Classes
  - Identification of Staff Who Did Not Take the Training Class



## 10 Elements of the EMS (Continued)

- **Monitoring and Measurement – Identify and Establish Metrics to Assess Performance Related to the Objectives and Targets**
  - Identify and Evaluate Existing Metrics
  - Determine If Appropriate or if Changes are Needed
  - Collect Metrics Through Time to Demonstrate Improvements or Areas of Weakness



## Reduce Greenhouse Gases by 5% by December 31, 2012

Activity	Responsibility	Metrics
Collect Baseline GHG Emissions Information	Joe	CO2e per year or per activity
Publish Data on Website	Frank	Complete
Convert Sedans to Electric	Norman	Number of Vehicles Converted by Year
Implement Biodiesel Program for On road fleet	Mary	Number of Gallons Per Year
Investigate Methane Capture and Associated Costs	Lynne	Memo
Implement Recycling Program	John	Tons of Material Recycled



## 10 Elements of the EMS (Continued)



- ◎ Assessment – Implement and Document a Process to Assess Whether the EMS is Fully Implemented and Whether the EMS is Effective
  - Establish and Implement Procedures for Conducting Periodic “Audits” of EMS Implementation and Reporting Audit Results
  - EMS Audits are a Combination of Interviews, Site Visits, and Documentation Reviews
    - Interviews Conducted From “Top to Shop”
  - Consider
    - Legal Requirements and Compliance
    - Building and Training the Assessment “Team”



## 10 Elements of the EMS (Continued)



- ◎ Reevaluation and Modification – From the Results of the Assessment and Other Considerations:
  - Identify Areas of Needed Improvement
  - Conduct a Root Cause Analysis on Each Area of Needed Improvement
    - Root Cause is Not “Find and Fix”
    - Why Did the Problem Really Occur?
  - Update EMS as Needed
  - Questions for Continual Improvement
    - How Can We Build Off of Our Successes?
    - Are New Objectives and Targets Needed?
    - How Can We Better Measure Our Progress?
    - Is a New Procedure Required?



## Best Practices

- Take the EMS Leap of Faith
  - EMS is a Proven Approach to Systematically Manage Environmental Impacts that Lead to Environmental Improvements, Cost Savings, and Improved Efficiency
- The EMS Approach is Flexible...Design it for Your Organization
  - The EMS Should Not be a Book of the Shelf Gathering Dust
- A+ is Not the Goal the First Time Through an EMS
  - Continual Improvement!
- You Will Get Stuck
  - Use Your Resources



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Questions?